



Chloroquine, Malaria Prophylaxis, and COVID-19: An Observation From Endemic Area

Rujittika Mungmungpantip¹ , Viroj Wiwanitkit² 

Dear Editor,

Coronavirus disease 2019 (COVID-19) pandemic is a big global public health crisis. There are still no effective drugs against this new viral infection. Out of several proposed drugs, chloroquine and hydroxychloroquine are widely discussed for their possible therapeutic role (1). As chloroquine is a routinely used drug for malarial prophylaxis, if it has an advantage against COVID-19, there should be no problem on the area that chloroquine prophylaxis is routinely used. Here the authors would like to discuss on the observed pattern of COVID-19 in Indochina where malaria is highly endemic. In Indochina, the border area between Myanmar and Thailand has very high incidence of malaria and malarial prophylaxis is routinely used. In Thailand, the COVID-19 early affected following its first appearance in China (2). In this same country, malaria is still an important local problem. The endemic area lies at nine provinces bordering Myanmar.

In the country, almost all the provinces are affected by COVID-19 with some sparing provinces. At present (10 September), 9 out of 77 provinces are still free from COVID-19. Additionally, one of these COVID-19 free provinces is the endemic area of malaria where malaria prophylaxis is routinely implemented. Based on this observation, malarial prophylaxis can be hypothesized as useful in the prevention of COVID-19. Nevertheless, COVID-19 is a disease that is mostly imported from setting to setting by migration and transportation.

Basically, the role or mechanism of action of chloroquine for the treatment of COVID-19 is mentioned in many reports. Chloroquine is considered useful due to its immunomodulatory and antithrombotic properties (3). Modes of action of chloroquine for treatment of COVID-19 include alteration of the acidic environment inside lysosomes and late endosomes, prevention of endocytosis, exosome release and phagolysosomal fusion, immunomodulation, adjustment of iron hemeostasis, and inhibition of the host cytokine storm (3). According to an updated metaanalysis (4), efficacy of chloroquine for treatment of COVID-19 was inconsistent across the studies. In a metaanalysis on clinical efficacy of chloroquine, Million et al. (4) concluded that chloroquine is effective to improve clinical and virological outcomes in COVID-19. A significant reduction of mortality is proposed (5). In another study by Xao et al. (5), the metaanalysis showed that chloroquine should be effective. Xao et al. (5) also predicted pharmacokinetic of the drug and confirmed clinical safety.

It is difficult to judge the exact impact of malarial prophylaxis in the prevention of COVID-19. This letter aimed at triggering any researchers to conduct a well-designed epidemiological “real-world” study for chloroquine against COVID-19, which will lead to the conclusion on actual effect of the classic drug, chloroquine.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – RM, VW; Design – RM, VW; Supervision – RM, VW; Resource – RM, VW; Materials – RM, VW; Data Collection and/or Processing – RM, VW; Analysis and/or Interpretation – RM, VW; Literature Search – RM, VW; Writing – RM, VW; Critical Reviews – RM, VW.

Conflict of Interest: The authors have no conflict of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

REFERENCES

- Zang Y, Han X, He M, Shi J, Li Y. Hydroxychloroquine use and progression or prognosis of COVID-19: a systematic review and meta-analysis. *Naunyn Schmiedeberg Arch Pharmacol* 2021; 394(4): 775–82. [\[CrossRef\]](#)
- Yasri S, Wiwanitkit V. Editorial: Wuhan coronavirus out- break and imported case. *Adv Trop Med Public Health Int* 2020;

Cite this article as:
Mungmungpantip R,
Wiwanitkit V. Chloroquine,
Malaria Prophylaxis, and
COVID-19: An Observation
From Endemic Area.
Erciyas Med J
2022; 44(1): 114-5.

¹Private Academic Practice,
Thailand

²Honorary Professor, Dr DY
Patil University, Pune, India

Submitted
15.09.2021

Accepted
18.09.2021

Available Online
22.10.2021

Correspondence

Rujittika Mungmungpantip,
Private Academic Practice,
Thailand
Phone: +90 66247656787
e-mail: pathumsook@gmail.com

©Copyright 2022 by Erciyas
University Faculty of Medicine -
Available online at
www.erciyesmedj.com

- 10: 1–2.
3. Tripathy S, Dassarma B, Roy S, Chabalala H, Matsabisa MG. A review on possible modes of action of chloroquine/hydroxychloroquine: repurposing against SAR-CoV-2 (COVID-19) pandemic. *Int J Antimicrob Agents* 2020; 56(2): 106028. [\[CrossRef\]](#)
 4. Million M, Gautret P, Colson P, Roussel Y, Dubourg G, Chabriere E, et al. Clinical efficacy of chloroquine derivatives in COVID-19 infection: comparative meta-analysis between the big data and the real world. *New Microbes New Infect* 2020; 38: 100709. [\[CrossRef\]](#)
 5. Yao X, Yan X, Wang X, Cai T, Zhang S, Cui C, et al. Population-based meta-analysis of chloroquine: informing chloroquine pharmacokinetics in COVID-19 patients. *Eur J Clin Pharmacol* 2021; 77(4): 583–93.